THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NIGEL T. COURT, RICHARD P. HAYES-PANKHURST, NEIL L. EVANS, JUDITH M. ANDERSON, ROY HOLBROOK, PETER R. STEPHENSON and ARTHUR M. WEIGHTMAN

Appeal No. 97-3097
Application 08/030,488[1]

ON BRIEF

Before CALVERT, METZ and PATE, Administrative Patent Judges.

CALVERT, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3 and 5 to 15, all the claims remaining in the application.

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[1] Application for patent filed June 2, 1993.

Claims 1 and 12, the two independent claims, are illustrative of the subject matter involved, and are reproduced in the appendix hereto.

The references applied in the final rejection are:

Bergstrom et al. (Bergstrom)	4,249,076	Feb. 3, 1981
Wade	4,250,256	Feb. 10, 1981
Ohtake et al. (Ohtake)	4,314,029	Feb. 2, 1982
Bereziat	4,456,138	June 26, 1984
Bellio	4,735,508	Apr. 5, 1988
Pailler	4,907,443	Mar. 13, 1990
Storar et al. (Storar)	5,088,612	Feb. 18, 1992
Waters (European patent application)	0 340 902	Nov. 8, 1989

The appealed claims stand finally rejected under 35 U.S.C. § 103 on the following grounds:

(1) Claims 1, 3, 5, 6, 8, 12 and 15, unpatentable over Waters in view of Bergstrom, Bellio and Pailler.

(2) Claim 7, unpatentable over the combination of references applied in ground (1), further in view of Wade.

(3) Claims 9 to 11, unpatentable over the combination of references applied in ground (1), further in view of Ohtake.

(4) Claims 13 and 14, unpatentable over the combination of references applied in ground (1), further in view of Storar and Bereziat.

Considering first the rejection of claims 1 and 12, the initial issue is whether the diaphragm 32 of Waters can move to a concave configuration, and if so, whether such configuration is detected. The examiner, from the remarks in the second paragraph on page 10 of the answer, appears to be of the opinion that it can.

We believe that the examiner has misconstrued Waters' disclosure. In the first place, it appears to be virtually impossible, from a physical standpoint, for the Waters diaphragm 32 to move to a concave configuration, since it is underlain by disk 24, described as "substantially rigid" (column 4, line 15). At most, if the pressure in the container were to fall low enough, the diaphragm 32 might protrude downward (inward) through hole 26 in disk 24, although hole 26 is shown as being of a much smaller diameter than the diameter of the diaphragm 32. We note, however, that such inward movement of the diaphragm is evidently not contemplated by Waters, who appears to be concerned only with detecting microorganisms which generate gas and cause a pressure increase in the container (column 5, lines 44 to 48).

Secondly, we disagree with the examiner's finding that "the scope of Waters includes measurement of the dome protrusion in both directions [inward/concave and outward/convex]" (answer, page 10). Waters does disclose means for detecting a convex configuration of the diaphragm, in that the top of the container is provided with a dome 16 into which the diaphragm expands when the pressure in the container increases, and is detected by light source 52 and photodetector 48; however, we find no disclosure or suggestion of any means for detecting an inward (concave) configuration (assuming that such configuration were possible). The examiner evidently bases the above-quoted finding on Waters' disclosure at column 3, lines 9 to 13, that the central area of the diaphragm is "easily movable by pressure differences across the membrane to a plurality of positions including that of a dome protruding in the direction of lower pressure" (examiner's emphasis). However, we do not take this to be a disclosure that the dome would extend into the container, but rather, read in context, the "lower pressure" to which this language refers is the pressure outside the container, when the pressure within the container has become greater than the

pressure in the incubator (see column 5, lines 49 to 56). Thus, this language merely indicates that the diaphragm protrudes outwardly as a dome, not that it may assume concave or convex configurations, or be detected or measured in a concave configuration.

The examiner recognizes that (answer, page 5):

> Waters does not teach a distance measuring device for measuring the conformation or position of the flexible portion, using a portion adjacent to the flexible portion as a reference, or a laser used for that purpose.

Bergstrom, Pailler and Bellio are therefore cited as evidence of the obviousness of these features.

Having fully considered the record in light of the arguments presented in appellants' brief and in the examiner's answer, we conclude that the subject matter recited in claims 1 and 12 is patentable over the references applied.

The Bergstrom reference does disclose, as the examiner notes, a prior art system for the measurement of pressure in a container by "analysis" of the light reflected from a flexible membrane in the wall of the container (column 1, lines 11 to 27), but does not disclose what analysis is to be performed. As far as the patentee's own invention is concerned, the

disclosure is insufficient as a teaching applicable to appellants' claimed invention, because the structure and operation of the pressure transducer are not described (column 4, lines 48 to 55).

The Pailler patent does not disclose a system for measuring both convexity and concavity of a container closure, but rather must be designed to do one or the other (column 7, line 39 to column 8, line 17). The apparatus disclosed by Bellio evidently would be capable of measuring either convexity or concavity of the end of a container, although such is not specifically disclosed and does not appear to have been contemplated.

We do not consider that Waters, in combination with any or all of Bergstrom, Pailler and Bellio, would suggest the claimed method or apparatus to one of ordinary skill in the art. As discussed above, Waters discloses only measuring the position of the diaphragm in its convex configuration. Even if the Bellio patent were to teach the measurement of the convex and concave configurations of a container, what motivation would there be to apply such teaching to the Waters

apparatus, when Waters is not concerned with concavity of the diaphragm?

Moreover, we find no disclosure in any of these references which would teach one of ordinary skill to use a portion of the container adjacent the diaphragm as a reference, as recited in claims 1 and 12. The examiner asserts that this would have been obvious (answer, page 11), but in support of this assertion does not point to any evidence of doing so with a laser distance measuring system. The portion of Bellio cited (column 1, lines 13 to 16) concerns a prior art system using a dial indicator, and not to an optical system.

The rejection of claims 1 and 12, and of claims 3, 5, 6, 8 and 15 dependent thereon, will not be sustained. Since the Wade, Ohtake, Storar and Bereziat references do not supply the deficiencies noted with regard to the rejection of claims 1 and 12, the rejections of claims 7, 9 to 11, 13 and 14 will likewise not be sustained.

Rejection Under 37 CFR § 1.196(b)

Pursuant to 37 CFR § 1.196(b), claims 10, 11, 13 and 14 are rejected for failure to comply with the second paragraph of 35 U.S.C. § 112.

The test of whether a claim complies with § 112, second paragraph, is

> whether the claim language, when read by a person of ordinary skill in the art in light of the specification, describes the subject matter with sufficient precision that the bounds of the claimed subject matter are distinct.

In re Merat, 519 F.2d 1390, 1396, 186 USPQ 471, 476 (CCPA 1975). In the present case, claim 10 recites:

> 10. A method according to claim 9 wherein each container displays a unique machine-readable identifying reference, such as a bar-code.

The bounds of the subject matter claimed by this claim are not distinct, because the expression “such as a bar code” makes it unclear as to whether the claim covers (i) all “unique machine-readable identifying reference[s],” (ii) only such references as are in some way similar to a bar code, or (iii) only a bar code. See Ex parte Steigerwald, 131 USPQ 74, 75 (Bd. App. 1961), and Ex parte Hall, 83 USPQ 38, 39 (Bd. App.

1948). Claim 10, and claim 11 dependent thereon, therefore do not comply with the statute.

Claim 13 is drawn to a cover, as follows:

13. A cover which can be fitted to a septum-sealed culture bottle, the cover incorporating locating means, that can enable the bottle and cover to be positively located in a container holding means of an apparatus according to claim 12.

The reference to claim 12 in this claim renders it (and dependent claim 14) indefinite. It is not clear whether claim 13 is intended to be drawn to (i) a cover per se, in which case it cannot be determined what limitations, if any, of claim 12 are included in it, or (ii) a cover in combination with the apparatus of claim 12, in which case the preamble is misleading (this latter interpretation seems to be the one adopted by the examiner).

Conclusion

The examiner's decision to reject claims 1, 3 and 5 to 15 is reversed. Claims 10, 11, 13 and 14 are rejected pursuant to 37 CFR § 1.196(b).

Any request for reconsideration or modification of this decision by the Board of Patent Appeals and Interferences based upon the same record must be filed within one month from the date of the decision. 37 CFR § 1.197. Should appellants

elect to have further prosecution before the examiner in response to the new rejection under 37 CFR § 1.196(b) by way of amendment or showing of facts, or both, not previously of record, a shortened statutory period for making such response is hereby set to expire two months from the date of this decision.

No time period for taking any subsequent action in connec-tion with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED 1.196(b)

IAN A. CALVERT Administrative Patent Judge	)	
ANDREW H. METZ Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
WILLIAM F. PATE, III Administrative Patent Judge	)	

Appeal No. 97-3097
Application 08/030,488

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APPENDIX

1. In a method of monitoring the growth of micro-organisms in liquid culture in a gas-tight container incorporating a flexible diaphragm capable of moving in response to pressure changes within the container, by detecting displacement of the diaphragm, the improvement wherein the position or confirmation of the diaphragm is repeatedly sensed using a laser as distance-measuring means, and wherein a portion of the container adjacent the diaphragm is used as a reference against which all relative positional or conformational changes of the diaphragm are detected, said diaphragm being capable of moving between concave and convex configurations in response to pressure changes within the container.

12. Apparatus for monitoring the growth of micro-organisms in liquid culture, comprising

means for holding an array of gas-tight containers each containing a liquid test sample and each incorporating a flexible diaphragm capable of moving in response to pressure changes within the container,

distance measuring means, in the form of a laser, capable of detecting changes in position or conformation of each diaphragm, said laser being arranged with respect to the container such that a portion of the container adjacent the diaphragm is used as a reference against which all relative positional or conformational changes of the diaphragm are detected, said diaphragm being capable of moving between concave and convex configurations in response to pressure changes within the container,

means for providing relative movement between the containers and the distance-measuring means for repeatedly presenting the containers individually in turn to the distance-measuring means, and

means for recording and/or displaying data obtained from the distance measuring means.